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(54) **SYSTEM FOR REDUCING ARBITRATED-LOOP OVERHEAD BY MAINTAINING CONTROL OF A COMMUNICATIONS CHANNEL AS LONG AS A PREDETERMINED AMOUNT OF DATA IS AVAILABLE WITHIN CONTROL OF CHANNEL NODE**

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(57) **ABSTRACT**

Control of a loop of a fiber-channel arbitrated-loop serial communications channel is maintained (i.e., the loop connection is held open) as long as a minimum amount of data, which optionally is determined by programming (called a "programmable amount of data"), is available for transmission, in order to reduce the overall amount of time spent arbitrating for control of the loop. The improved communications channel system includes a channel node having one or more ports, each port supporting a fiber-channel arbitrated-loop serial communications channel loop, wherein each port arbitrates for control of that port's attached channel loop. The system also includes an arbitration-and-control apparatus to reduce arbitrated-loop overhead, wherein control of the channel loop, once control is achieved by arbitration, is maintained by the arbitration-and-control apparatus as long as a predetermined amount of data is available within control of the node. In addition, a method to reduce arbitrated-loop overhead is described.

19 Claims, 15 Drawing Sheets